Journal of Non-Crystalline Solids 131–133 (1991) vii–xvii
North-Holland

Contents

Contents Parts I and II vii

PART I

Section 1. Viscous liquids and the glass transition: linear response regime

Molecular motion in glass-forming systems
Williams, G. 1

Relaxation in liquids, polymers and plastic crystals – strong/fragile patterns and problems
Angell, C.A. 13

Relaxation spectroscopies of viscous liquids
Wu, L., P.K. Dixon, S.R. Nagel, B.D. Williams and J.P. Carini 32

Impulsive stimulated scattering study of the structural relaxation dynamics of liquid triphenylphosphite
Silence, S.M., S.R. Goates and K.A. Nelson 37

Rotation motion of molecular probes in o-terphenyl and cis-polyisoprene
Hyde, P.D., T.E. Evert, M.T. Cicerone and M.D. Ediger 42

Dielectric relaxation of 3-bromopentane in mixtures with 3-methylpentane
Berberian, J.G. 48

Incoherent quasi-elastic neutron scattering of propylene carbonate in the glass instability range
Börjesson, L. and W.S. Howells 53

Ultrasonic, dielectric and thermodynamic properties of 2-butoxyethanol
D'Arrigo, G., A. Paparelli, D. Bertolini, M. Cassettari, G. Salvetti, E. Tombari and S. Veronesi . 58

Molecular dynamics study of the coherent density correlation function in a supercooled simple one-component liquid
Dzugutov, M. and U. Dahlborg 62

Molecular mobility in the liquid–glass transition range: cooperative motions
Etienne, S., J.Y. Cavaillé and J. Perez 66

Multifractal analysis of frequency spectra
Giona, M., L. Marrelli and P. Piccirilli 71

Two-step freezing process in the mixed crystal RADP
Grimm, H., E. Courtens and K. Parlinski 76

Temperature dependence of the stretched exponent in structural relaxation of fragile glass-forming molecular liquids
Ngai, K.L. 80

Viscous liquids and glasses under high pressure
Oliver, W.F., C.A. Herbst and G.H. Wolf 84

Dynamic light scattering and low-frequency Raman scattering study of ionic $KNO_3 \cdot Ca(NO_3)_2$ mixtures
Pavlatou, E.A., G.N. Papatheodorou, A.K. Rizos and G. Fytas 88

Theory of local-polarization distribution in deuteron glasses: effects of replica-symmetry breaking
Pirc, R., B. Tadić, R. Blinc and R. Kind 92

0022-3093/91/$03.50 © 1991 – Elsevier Science Publishers B.V. (North-Holland)

A dielectric study of molecular mobility at glass transition
Pissis, P. and L. Apekis 95
Energy landscapes in disordered systems via studying the dymanics of mobile probes
Rössler, E., K. Börner, M. Schulz and M. Taupitz 99
When is a polymer a polymer? A light scattering study of crossover from viscous fluid-like behaviour to chain constrained dynamics
Jacobsson, P., L. Börjesson and L.M. Torell 104
Dynamic susceptibility in a supercooled liquid: a molecular dynamics study
Wahnström, G. 109
Investigations of the transitions of some tetraalkylammonium halides by DSC, NMR, and X-ray diffraction
Xenopoulos, A., A.H. Narten, J. Cheng and B. Wunderlich 113
The glass transition from the fluid side
Mazenko, G.F. 120
Order parameter determination in proton and deuteron glasses via NMR and EPR: the fast and slow motion limits
Blinc, R., J. Dolinšek and S. Žumer 125
Density fluctuations around the glass-transition of low molecular weight glass-forming liquids
Fischer, E.W., G. Meier, T. Rabenau, A. Patkowski, W. Steffen and W. Thönnes 134
A Brillouin scattering study of an extremely 'fragile' molecular glass former
Börjesson, L., M. Elmroth and L.M. Torell 139
Dynamical processes in organic glass-forming van der Waals liquids
Meier, G., B. Gerharz and D. Boese 144
α-relaxation near the glass transition
Sjögren, L. and W. Götze 153
β-relaxation in supercooled liquids
Götze, W. and L. Sjögren 161
Investigation of the glass transition in polymers under the aspect of mode coupling predictions
Frick, B., R. Zorn, D. Richter and B. Farago 169
Viscoelastic relaxation in simple liquids: an interaction-induced phenomenon
Montrose, C.J., T.A. Litovitz, G. Birnbaum and R. Mennella 177
Mechanical stress relaxation in inorganic glasses studied by a step-strain technique
Böhmer, R., H. Senapati and C.A. Angell 182
High-frequency dielectric dispersions in dilute water-in-oil microemulsions
Cametti, C., P. Codastefano and P. Tartaglia 187
Percolation model for relaxation in random systems
Chamberlin, R.V., D.N. Haines and D.W. Kingsbury 192
A thermodynamic theory of relaxation based on a distribution of non-linear processes
Cunat, Ch. 196
Orientational ordering as a possible mechanism for viscosity-enhancement of supercooled liquids
Dattagupta, S. 200
Characteristic length of glass transition
Donth, E. 204
Hierarchically constrained dynamics on self-similar structures
Roman, H.E., and M. Giona 207
Relaxation processes with age-dependent transition rates
Halpern, V. 210

Frequency-dependent response and dynamic disorder
Hilfer, R. 213
Are the low-temperature relaxations of glassy ferroelectrics hierarchical?
Höhler, R., G. Kasper and S. Hunklinger 217
The glass transition of organic liquids confined to small pores
Jackson, C.L. and G.B. McKenna 221
Low-energy excitations from interacting tunneling units in the mean-field approximation
Nielaba, P. and M.W. Klein 225
Strong low-frequency electrical dispersion in microemulsions
López-Quintela, M.A., J. Rivas, D. Losada and J.I. López Cabido 229
Toward a theory of relaxation in correlated systems: diffusion in the phase space of a chaotic Hamiltonian
Ngai, K.L. and R.W. Rendell 233
Frequency-dependent processes in dispersed systems of mesoscopic particles
Pelster, R., G. Galeczki, G. Nimtz and P. Pissis 238
Experimental results revealing a change of diffusion mechanism above T_g
Rössler, E. 242
Ergodicity, non-exponential relaxation and cooling processes for a simple 1-D 'glass' model
Kob, W. and R. Schilling 248
Finite time thermodynamics of a Schottky anomaly: the minimal glass transition?
Szwarc, H. 252
Molecular dynamics simulations of supercooled liquids near the glass transition
Barrat, J.-L. and J.-N. Roux 255
Computer simulation of models for orientational glasses
Binder, K. 262
Relaxation dynamics in orientational glasses
Loidl, A., K. Knorr, J. Hessinger, R. Böhmer, I. Fehst and U.T. Höchli 269
Non-exponential relaxation in dense microemulsions
Chen, S.H., J. Rouch and P. Tartaglia 275
Theoretical aspects of coupling model schemes of slow relaxation in complex correlated systems
Rajagopal, A.K., K.L. Ngai and S. Teitler 282
A model for dense systems with deformable particles or molecules
Pakula, T. 289
Intermolecular cooperativity in dielectric and viscoelastic relaxation
Matsuoka, S. and X. Quan 293
Proteins as complex systems
Young, R.D. and R. Scholl 302
An alternative model for the low-temperature properties of glasses
Yu, C.C. 310
A solvable microscopic model for very dilute quadrupole glasses
Klein, M.W. 313
Scaling behaviour of structural relaxation near the glass transition: a critical analysis
Mezei, F. 317
Supercooled liquids: a new look at selected relaxation phenomena
Kivelson, D., M. Greenfield and S. Gomperts 327
A study of dielectric relaxation in micellar solutions
Huang, J.S., J. Sowa and S. Bhattacharya 335

Asphaltenes in polar solvents
Sheu, E.Y., D.A. Storm and M.M. De Tar 341
Models for relaxation in glass-forming liquids based on sequentially correlated displacements
Mazur, S. 348
Structural dynamics of proteins, scaling behaviour and liquid glass transition
Doster, W., S. Cusack and W. Petry 357
Glass-like behaviour of proteins as seen by Mössbauer spectroscopy
Parak, F. and G.U. Nienhaus 362
Diffusion and gating in membrane proteins
Condat, C.A. and J. Jäckle 369
Preliminary impulsive stimulated light scattering study of the glass-forming liquid $LiCl/H_2O$: evidence for unusual structural relaxation dynamics
Halalay, I.C. and K.A. Nelson 375
Discussion Session – Viscous liquids and glass transitions: the linear response regime
Götze, W., C.T. Moynihan and K. Nelson (moderator) 378

Section 2. Non-linear regime

Section 2.1. Volume and enthalpy recovery

Some problems in the non-linear viscoelasticity of amorphous glassy polymers
Struik, L.C.E. 395
Analysis of creep and physical aging in glassy polymers
Read, B.E. 408
Linear and non-linear structural relaxation
Moynihan, C.T., S.N. Crichton and S.M. Opalka 420
Adam–Gibbs formulation of non-linear enthalpy relaxation
Hodge, I.M. 435
Volume-dependent rate processes predicted by the coupling model
Rendell, R.W., K.L. Ngai and D.J. Plazek 442
Effects of heating rate on enthalphy recovery in polystyrene
O'Reilly, J.M. and I.M. Hodge 451

Section 2.2. Physical aging

Dielectric relaxation and physical aging in polar glassy polymers
Alegría, A.A., L. Goitiandia, I. Tellería and J. Colmenero 457
Influence of thermal history on molecular relaxations of salt-blended polyethylene oxide
Bartolotta, A., G. Di Marco and G. Carini 462
A model for non-linear viscoelastic relaxation
Rekhson, S. 467
Gravity-induced flow of a structural glass at zero temperature
Yu, C.C. and S.N. Coppersmith 476
Enthalpy recovery in Se rich Ge–Se glasses during isothermal annealing and continuous heating
Clavaguera-Mora, M.T., M.D. Baró, S. Suriñach, J. Saurina and N. Clavaguera 479
Structural recovery in silver iodide containing glasses: illustration of the use of the peak-shift method for the evaluation of the Narayanaswamy parameter x
Hutchinson, J.M., M.D. Ingram and A.J. Pappin 483

Hysteresis effects in low expansion glass-ceramics
Pannhorst, W., R. Haug, E. Rodek and K. Stetter 488

Section 2.3. Large deformation of polymers

Structural changes in glassy polycarbonate induced by cyclic stresses
Liu, L.B., A.F. Yee, J.C. Lewis and D.W. Gidley 492
Aging in glasses subjected to large stresses and deformations
McKenna, G.B., M.M. Santore, A. Lee and R. S. Duran 497
Rejuvenation and annealing effects on polycarbonate
Bauwens-Crowet, C. and J.-C. Bauwens 505
Deuterium NMR lineshapes in polymer networks
Poon, C.-D. and E.T. Samulski 509
Strain-induced liquid-like structures in glassy polymers
Nanzai, Y. 516
Photorelaxation in amorphous $GeSe_{1-x}$ ($0 < x < 0.08$) thin films
Vautier, C., T. Derrey, J.M. Saiter and Ph. Lebaudy 520
Relaxations and structural states in vitreous SeGe alloys
Saiter, J.M., J. Grenet and Ph. Lebaudy 524
Discussion Session – The phenomenology and models of the kinetics of volume and enthalpy in the glass transition range
McKenna, G.B. and C.A. Angell 528

Author index Parts I and II xxv
Subject index Parts I and II xxxvi

PART II

Contents Parts I and II vii

Section 2.4. Polymer solutions

Local modification of solvent dynamics by polymeric solutes
Schrag, J.L., T.M. Stokich, D.A. Strand, P.A. Merchak, C.J.T. Landry, D.R. Radtke, V.F. Man, T.P. Lodge, R.L. Morris, K.C. Hermann, S. Amelar, C.E. Eastman and M.A. Smeltzly 537
Evidence of modification of solvent reorientation dynamics from depolarized Rayleigh spectra of polymer in Aroclor solutions
Fytas, G. and K.L. Ngai 544
How good is the bead-spring model?
Amelar, S., C.E. Eastman, T.P. Lodge and E.D. von Meerwall 551

Section 2.5. Glassy polymers

A lattice model for dynamics in a mixed polymer–diluent glass
Jones, A.A., P.T. Inglefield, Y. Liu, A.K. Roy and B.J. Cauley 556
Low temperature motions in, and mechanical properties of, glassy plasticized polymers
Kambour, R.P., J.D. Carbeck and W.L. Nachlis 563
Diluent effects on viscoelastic behavior
Plazek, D.J., C. Seoul and C.A. Bero 570

Dynamic light scattering from a polymer/additive system
Floudas, G. and G. Fytas 579
Microhardness dependence on the diluent content for an amorphous copolyterephthalate
Lorenzo, V., R. Benavente, E. Pérez, A. Bello and J.M. Pereña 584
Electrical percolation phenomena in polymer–solvent systems
Anderson, J.E., K.M. Adams and P.R. Troyk 587

Section 2.6. Polymer diffusion, dynamics and simulation

Reptation and constraint release
Sillescu, H. 593
Development and relaxation of the interface in binary polymer mixtures
Klein, J. 598
Neutron spin–echo investigations on the dynamics of polymer systems
Richter, D., L.J. Fetters, J.S. Huang, B. Farago and B. Ewen 604
The hydrodynamic scaling model for polymer dynamics
Phillies, G.D.J. 612
Self-diffusion of polydisperse linear polymers
Finerman, T.M. and B. Crist 620
Composition and molecular weight dependence of the interdiffusion coefficient and critical behavior in a binary polymer blend as measured by quasi-elastic light scattering
Momper, B., G. Meier and E.W. Fischer 624
Diffusion of linear polymer chains in gels
Pajevic, S., R. Bansil and C. Konak 630
Monte Carlo studies of polymer interdiffusion and spinodal decomposition: a review
Binder, K., H.-P. Deutsch and A. Sariban 635
Mode–mode-coupling theory of the dynamics of polymeric liquids
Schweizer, K.S. 643
Self-diffusion in polymer solutions using the bond-fluctuation MC-algorithm
Paul, W., K. Binder, D.W. Heermann and K. Kremer 650
Entropic barrier model for polymer diffusion in concentrated polymer solutions and random media
Muthukumar, M. 654
Convolution integral formulation of dispersive diffusion transport: numerical solutions for the coupling model waiting time distribution
Rendell, R.W. and K.L. Ngai 667
Tracer diffusion of linear and star polymers in entangled solutions and gels
Lodge, T.P. and N.A. Rotstein 671
Infrared polarimetry studies for multicomponent polymer melts
Fuller, G.G. and C.M. Ylitalo 676
DNA electrophoretic mobility and deformation in agarose gels
Chu, B. and Z. Wang 685
NMR approach to melt properties: segmental motions, temporary elasticity and terminal relaxation
Cohen-Addad, J.P. 693
Neutron scattering studies on the relation between structure and dynamics of star-shaped polymers
Ewen, B., D. Richter, L.J. Fetters, J.S. Huang and B. Farago 697
Interdiffusion at the interface of polymeric bilayers: evidence for reptation?
Felcher, G.P., A. Karim and T.P. Russell 703

Polymer self-diffusion measurements by small-angle neutron scattering
Crist, B. 709
A non-reptation model for polymer dynamics in the melt and concentrated solutions
Herman, M.F. 715
Dielectric normal-mode process of polyisoprene in blends and in networks
Adachi, K. and T. Kotaka 723
Molecular dynamics in linear and multi-armed star polymers of cis-polyisoprene as studied by broadband dielectric spectroscopy
Kremer, F., D. Boese and L. Fetters 728
Diffusion in polymer systems, measured with the pulsed-gradient NMR method
Von Meerwall, E.D. 735
Discussion Session – Polymer diffusion, dynamics and viscoelasticity
Binder, K., T.P. Lodge, H. Sillescu, K. Schweizer and H. Yu (moderator) 742

Section 2.7. Polymer viscoelasticity

Segmental dynamics of polymer melts
Monnerie, L. 755
Two-dimensional NMR: new prospects for the elucidation of molecular dynamics in complex systems
Spiess, H.W. 766
Viscoelastic properties of semi-dilute solutions
Adam, M. 773
2D-solid state NMR studies of ultraslow motions: phenylflips and chain motions in the glassy state
Schaefer, D., M. Hansen, B. Blümich and H.W. Spiess 777
Study of stress and birefringence relaxation of new amorphous polyarylates
Tanaka, T. and T. Inoue 781
Melt rheology of highly branched polymers
Roovers, J. 793
Dynamic light scattering from polymer solutions under non-hydrodynamic conditions
Patterson, G.D. and G.C. Berry 799
Ultrasonic examination of the dynamic glass transition in amorphous polymers
Alig, I., F. Stieber and S. Wartewig 808
A relaxation theory to explain the rheology of elasto-plastic materials
Cunat, Ch. 812
Dynamic light scattering from ternary mixtures of two homopolymers in solution
Borsali, R., L. Giebel, E.W. Fischer and G. Meier 816
Relaxation processes in a homogeneous diblock copolymer at low and high temperatures by means of dynamic light scattering
Kanetakis, J. and G. Fytas 823
Relation of diffusion to viscoelastic properties in a glassy polymer-swelling agent system
Sanopoulou, M. and J.H. Petropoulos 827
Entanglement network of thread-like micelles of a cationic detergent
Shikata, T. and T. Kotaka 831
A myopic review of the viscoelastic behavior of polymers
Plazek, D.J. 836
Inter- and intramolecular interactions in the dielectric behavior of phenyl and chlorophenyl esters of poly(acrylic acid)
Díaz-Calleja, R., E. Riande and J. San Román 852

α-relaxation and molecular dynamics in glass-forming polymeric systems
Colmenero, J. 860
Localized segmental motion and Brillouin scattering in a polymer liquid
Wang, C.H., B.Y. Li, R.W. Rendell and K.L. Ngai 870
Comparison of viscoelastic and dielectric relaxations as a function of carbon black loading in butyl and chlorobutyl rubber
Capps, R.N. and J. Burns 877
Non-linear effects in the vicinity of the resonant frequency of viscoelastic measurements devices
Conde, L., E. Riande, M.A. Rubio and V. Fairén 883
Dynamic mechanical relaxation in some polyurethanes
Hartmann, B. and G.F. Lee 887
Viscoelastic relaxations in thermotropic polybibenzoates
Pereña, J.M., M.M. Marugán, A. Bello and E. Pérez 891
Effects of entanglements on elastic modulus of elastomer networks after terminal relaxation
Langley, N.R. 894
Molecular analysis of the viscoelastic properties of epoxy networks as deduced from the study of model systems
Cukierman, S., J.-L. Halary and L. Monnerie 898
Formation, structure and viscoelastic behaviour of polymer networks
Ilavský, M. and J. Hrouz 906
Dynamic viscoelasticity during sol–gel reactions
Hodgson, D.F. and E.J. Amis 913
Phenomenological aspects of relaxations in chemically controlled dipolar diffusion in polymers
Johari, G.P. and M.B.M. Mangion 921
Continuous dielectric measurement of polymerizing systems
Kranbuehl, D.E. 930
A comparison of a point defects theory with mechanical relaxations in polymers
Cavaillé, J.Y., J. Perez and G.P. Johari 935
From conformational transitions in a polymer chain to segmental relaxation in a bulk polymer
Ngai, K.L. and R.W. Rendell 942
Dynamics of the α-process of polymer systems on a microscopical timesale. Neutron and nuclear magnetic resonance study
Colmenero, J., A. Alegría, J.M. Alberdi and B. Frick 949

Section 2.8. Glassy ionics

Relaxation processes in ionically conducting glasses
Ingram, M.D. 955
Ion movement relaxation in inorganic glasses – salient features
Jain, H. 961
Analysis of electric relaxation in sodium trisilicate and lithium fluoroborate glasses from 10^2 to 10^9 Hz and 25 to 300°C
Cole, R.H. and E. Tombari 969
Neutron scattering by superionic conductor glasses
Dianoux, A.J., M. Tachez, R. Mercier and J.P. Malugani 973
Structural relaxation and chain flexiblity in polymeric ion conductors
Torell, L.M. and S. Schantz 981
Dielectric relaxation in glasses containing different relaxing species
Mendiratta, S.K. and L.C. Costa 990

Dielectric and infrared reflectance studies of inorganic oxide glasses
Burns, A., H.P. Brack and W.M. Risen, Jr. 994

Nuclear spin relaxation and atomic motion in inorganic glasses
Kanert, O., J. Steinert, H. Jain and K.L. Ngai 1001

Nature of the linear frequency-dependent ac conductivity in glassy ionic conductors
Strom, U., K.L. Ngai and O. Kanert 1011

Mechanical properties of dynamically disordered networks
Nitzan, A., R. Granek and M. Ratner 1018

Diffusion in disordered systems: non-Debye relaxation due to long-range interactions
Bunde, A. and P. Maass 1022

Relaxations and local motions in glassy cationic conductors
Carini, G. and G. Tripodo 1028

Non-exponential relaxation in ionically conducting glasses: the diffusion-controlled relaxation model
Elliott, S.R. and A.P. Owens 1036

Multiple frequency spin–lattice relaxation time and ionic conductivity measurements of $Li_2S + SiS_2$ glasses from 1 Hz to 40 MHz
Martin, S.W., H.K. Patel, F. Borsa and D. Torgeson 1041

Interface and bulk relaxation in solid ionic conductors
Bates, J.B., J.C. Wang and Y.T. Chu 1046

β-NMR studies of spin–lattice relaxation in glassy and layer-crystalline compounds
Heitjans, P., W. Faber and A. Schirmer 1053

Relaxation processes in ionic conductive chalcogenide glasses studied by electrical and NMR spectroscopies
Pradel, A. and M. Ribes 1063

Chemical relaxations at the glass transition of a lithium conducting glass
Chryssikos, G.D., E.I. Kamitsos, M.S. Bitsis and A.P. Patsis 1068

Ionic and atomic degrees of freedom in silver chalcogenide glasses studied by mechanical and electrical spectroscopies
Etienne, S., J. Perez, A. Pradel and M. Ribes 1072

Ion-channel match in mixed alkali glasses
Hara, M. 1076

A number of models for CPA impedances of conductors and for relaxation in non-Debye dielectrics
Jacquelin, J. 1080

AC conductivity in ionic glasses: analysis of different methods of investigation
Henn, F., J.C. Giuntini and J.V. Zanchetta 1084

Evidence from vibrational spectroscopy for cluster and tissue pseudophases in glass
Ingram, M.D., G.D. Chryssikos and E.I. Kamitsos 1089

Lithium conducting borate glasses: evidence for two broad distributions of cation-hosting environments
Kamitsos, E.I., G.D. Chryssikos, A.P. Patsis and M.A. Karakassides 1092

Conductivity relaxation in silver iodide–silver borate glasses
Niklasson, G.A., K. Brantervik and L. Börjesson 1096

Transient and ac electrical conductivity in evaporated thin rubidium bromide films
Xanthopoulos, N.I., S.N. Georga and M.N. Pisanias 1099

A quasi-elastic neutron scattering study of Ag^+ ion motion in the superionic glassy system Ag_2S–GeS_2
Owens, A.P., A. Pradel, M. Ribes and S.R. Elliott 1104

Mixed alkali effects in ionic conductors: a new model and computer simulations
Bunde, A., M.D. Ingram, P. Maass and K.L. Ngai 1109
Discussion session – Glassy ionics
Angell, C.A., A. Bunde, M. Ingram, H. Jain and W. Risen (moderator) 1113

Section 2.9. Dielectric studies

In Memoriam: Charles Phelps Smyth (1895–1990)
Anderson, J.E. 1123
Charge motions and dynamics of relaxation
Cole, R.H. 1125
Dielectric studies of segmented polyurethanes based on polyolefine: relations between structure and dielectric behaviour
Boiteux, G., G. Seytre, L. Cuve and J.-P. Pascault 1131
On the static permittivity of dipolar and conductive media – an educational approach
Coelho, R. 1136
Dielectric and enthalpic relaxation behavior of polyesters, polycarbonates and polystyrene and their blends near T_g
O'Reilly, J.M. and J.S. Sedita 1140
Dielectric relaxation and a new phase of cyclooctanol at pressures to 1 GPa
Forsman, H. and O. Andersson 1145
Effect of compatibility on dielectric relaxation and on the microstructure of semicrystalline polymer blends
Linares, A., C. Del Rio and J.L. Acosta 1149
Non-linear dielectric relaxations of polymers
Furukawa, T. 1154
Relaxation of isolated dipoles in polymer chain
Mashimo, S. and R. Nozaki 1158
A new model for the interpretation of the shape of the dielectric relaxation function
Schönhals, A. and E. Schlosser 1161
Dielectric permittivity and loss of an aluminum-filled epoxy resin
Tsangaris, G.M., G.C. Psarras and A.J. Kontopoulos 1164
Dielectric relaxation of water–alcohol and alcohol–alcohol solutions
Bertolini, D., M. Cassettari, G. Salvetti, E. Tombari and S. Veronesi 1169
Dielectric effects of water in water-containing systems
Pissis, P., A. Anagnostopoulou-Konsta, L. Apekis, D. Daoukaki-Diamanti and C. Christodoulides 1174
Dielectric study of DNA–water systems by the thermally stimulated currents method
Anagnostopoulou-Konsta, A., D. Daoukaki-Diamanti, P. Pissis, G. Loukakis and E.G. Sideris . . 1182
Dielectric relaxation at radiofrequencies of DNA–protamine systems
Bonincontro, A., R. Caneva and F. Pedone 1186
On a simple model of ferroelectricity in liquid crystals
Biscarini, F., C. Chiccoli, P. Pasini and C. Zannoni 1190

Section 2.10. Glassy ceramics and electronic materials

Dielectric relaxation in ferroelectrics
Uhlmann, D.R., G. Teowee and J.M. Boulton 1194

Correlation between dielectric relaxation and cation size in ceramics with composition related to $BaTiO_3$
Kazaoui, S., J. Ravez and J.L. Miane 1202
Anomalous behaviour of the refractive index during the annealing of densified, amorphous SiO_2
Arndt, J., R.A.B. Devine and A.G. Revesz 1206
Static relaxations of puckering distortions in intercalated layered solids
Solin, S.A., H. Miyazaki, S. Lee and S.D. Mahanti 1213
Structural relaxation following crystallization in high purity GeO_2 glass
Tsai, T.E., R. Pong and P.L. Highby 1218
Space charge relaxation in ferrite ceramics with grain boundary barrier layers
Largeteau, A., J. Ravez and J.L. Miane 1224
Dielectric relaxation study of $Na_{0.33}V_2O_5$ sol–gel bronze in a broad frequency range 10^6–10^{10} Hz
Badot, J.C., N. Baffier and A. Fourrier-Lamer 1227
Electronic relaxation of the $^4T_2$ state of chromium(III) in BIGaZYT fluoride glasses
Fernández, J., M.A. Illarramendi, R. Balda, M.A. Arriandiaga, J. Lucas and J.L. Adam 1230
Magnetic relaxation in amorphous metals
Rivas, J., M.A. López-Quintela, D. Martínez, F. Walz and H. Kronmüller 1235
Dispersive diffusive transport of free excitons in high purity silica
Tsai, T.E., and D.L. Griscom 1240
The low-frequency conductivity in localized disordered systems
Pollak, M. 1245
Excess carrier and structural relaxation phenomena in amorphous semiconductor materials and devices
Marshall, J.M. and A.R. Hepburn 1250
Low-energy excitations and energy relaxations in CDW ground state at very low temperatures
Biljaković, K., J.C. Lasjaunias and P. Monceau 1254
Studies of relaxation effects in the Coulomb gap
Mochena, M. and M. Pollak 1260

Author index 1267
Subject index 1278